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ABSTRACT

This paper discusses findings of ecological studies of classroom learning drawn from the fields of anthropology, sociology, and ecological psychology. The aim of the studies is to illustrate the processes of teaching and learning rather than to establish generalizable rules for instruction by challenging the methodology and findings of traditional educational research. The studies satisfy four criteria: (1) Teaching and learning are treated as continuously interactive rather than as a set of causes and effects; (2) Attitudes and perceptions of all participants are important; (3) Teachers' and students' interactions with the social and environmental climate are addressed; and (4) Ideally, ecological research considers both immediate and extended settings and relationships in its analysis. The studies are discussed in terms of socialization in the school, socialization and academic learning, the social patterns that perpetuate inequality, and studies of school change. (FG)

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The Social Side of Schooling:

Ecological Studies of Classrooms and Schools

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Schools are social organizations. What teachers and students do can never be comprehended solely in terms of teaching and learning academic subject matter. The formal curriculum of academic knowledge and skills has a counterpart "hidden curriculum" of values and behavior, which is taught implicitly by the social systems of the school and classroom. Educational research and practice based on the assumption that schools are only or even predominantly settings for academic learning are severely limited in value, as are research methods and teaching techniques that treat instruction as a primarily technical task. This is the message of ecological studies of schools and classrooms over the past 15 years. It is a message that must be heard if schools are to be improved in the future.

Ecological researchers did not discover the social aspects of schools; earlier thinkers and observers such as Dewey (e.g., 1916, 1938), Waller (1932), and Parsons (1959) pointed out what many teachers already knew, that teaching and learning in classrooms are social activities, conducted in groups, and that such teaching and learning differs profoundly from that embodied in such powerful images as Socrates in dialogue with his students, Emile with his tutor, or the psychologist "shaping" rats and pigeons one-at-a-time in the laboratory. Recent ecological studies have revealed the operations of school social systems in sufficient detail to provide a clearer understanding of how they work and what their implications are both for the socialization* of students--their acquisition of values and behaviors appropriate to members of social units --and for their academic learning.

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* Note that socialization is a technical term for a particular kind of nonacademic learning. It is not to be confused with the popular usage of "socializing" to mean participation in informal social activity. In this paper, the term is used first in its broadest meaning to refer to preparation for membership in society, and then applied to the process whereby children learn to behave appropriately in classrooms.

Ecological research in schools is defined by its proximity to the following criteria. (1) It treats teaching and learning as a continuously interactive process rather than as a set of discrete inputs and outcomes. Ecologists are loath to label one event a "cause" and another an "effect." They prefer to trace the exchanges and transformations occurring within a system until they can describe the system as a whole. Once the multiple, often reciprocal interconnections have been established within the system, it is unnecessary and misleading to isolate a few factors within it and label them "cause" and "effect." Ecological studies of schools attempt to comprehend the behavior of students and teachers in all its complexity rather than in segments, such as teachers' questioning styles or disciplinary techniques and students' responses to them. While the effort can never be totally successful because selection and interpretation are essential to understanding, ecological researchers try to minimize their imposition of previously determined interpretive frameworks on school phenomena. I have argued elsewhere (Hamilton, 1981) that ecological studies can include assessments of learning, but to date they have paid much more attention to what happens in schools and classrooms than to how much is learned.

(2) Ecological studies treat the attitudes and perceptions of the actors--teachers, students, administrators, parents, and others--as important data about the school and classroom. This contrasts with the behaviorist principle that only visible behavior is worthy of study. Formal and informal interviews and occasionally questionnaires are employed in ecological research to learn how people understand and feel about what happens in schools and its relation to their lives. This criterion reflects the anthropologists' wish to obtain an "emic" or insider's perspective and the phenomenological school in psychology and sociology, perhaps best represented by W.I. Thomas's statement, "If men define situations as real, they are real in their consequences." (See Bronfenbrenner, 1979, pp. 22-23.)

(3) Attention to persons and environments as they interact is the sine qua

non of ecological research. While research in the tradition of educational psychology has been most concerned with persons, sometimes manipulating small elements of the environment experimentally, ecological research attempts to understand both human behavior and the physical and social context in which it occurs, and to trace the reciprocal influences of persons and environments. This paper will address studies attending more to the social than the physical environment. A recent review of research on the physical environment of the school (Weinstein, 1979) cites only one study meeting the criteria stated here for ecological research.

(4) The ideal ecological study considers person-environment interactions not only within the immediate setting--here the school and classroom--but the influences on those interactions of other contexts, particularly the family, community, culture, and socio-economic system. This is the view of ecological research presented by Bronfenbrenner (1979). It is also the approach advocated by Ogbu (1981) in opposition to the prevailing trend in ethnographic studies toward the microscopic analysis of behavior in classrooms with attention to the larger context only to the point of identifying the location, predominant social class, and ethnic composition of the setting. Bronfenbrenner's treatment of this issue begins with the immediate setting ("microsystem") and moves progressively outward, while Ogbu's begins with the phenomena of racial and economic stratification and explores the consequences and self-perpetuating quality of that stratification in home, community, and school settings, but their exhortations to connect what happens in schools empirically with what happens beyond their walls are complementary.

Studies satisfying all four criteria are rare, but most of those summarized in the following pages come close. They are drawn from the fields of anthropology, sociology, and ecological psychology. Studies that examine only a few variables by means of a single method of data collection are absent, except for a few citations when they directly relate to findings from ecological research.

The reader should be warned that ecological studies represent more than a distinctive approach to research on teaching and learning; they are based on an emerg-

ing paradigm (Doyle, 1978) that challenges conventional ways of thinking about these phenomena and conventional ways of studying them. The aim of research conducted in this new paradigm to date has been to illuminate the process of teaching and learning rather than to establish general laws to guide instruction. The discovery of general laws has motivated a good deal of social scientific research, but the returns have been meager (Cronbach, 1975; McGeachie, 1974.) Urie Bronfenbrenner has proposed that the function of social science with respect to social policy "Is not to answer questions but to question answers." This aphorism is an apt summation of the contributions of ecological research to educational practice to date. The following pages do not offer rules for teaching or generalizations based on large representative samples of schools; they summarize some of the challenges ecological studies have made to conventional research and practice in education, and suggest by describing in detail what is true in particular schools what might also prove to be true in other schools if we only look to see.

The "answers" that ecological research has questioned are really assumptions about the centrality of purely academic activities underlying both research and practice in schools. For example, when the National Assessment of Educational Progress administers tests of students' academic knowledge and skills, the implicit assumption is that these tests comprehend all or most of the important business of schools; their scores provide a valid measure of "educational progress." When teachers are trained to state precise behavioral objectives for their lessons a similar assumption is made, along with a closely related assumption that teaching is primarily a technical task, which can be adequately performed once objectives have been stated, appropriate content selected, and the most effective instructional methods followed. Ecological research does not deny that academic learning is critically important or that certain technical devices such as behavioral objectives can contribute to improving instruction. It does, however, consistently challenge simple portrayals of what schools do and easy prescriptions for making them more effective.

Socialization in the School

Visit a fourth grade classroom with Jules Henry. A spelling baseball game is underway. Two captains appointed by the teacher choose up sides. The teacher "pitches" words to the members of each team in order. A word correctly spelled on the blackboard is a "hit" and the speller advances to first base. Four words spelled correctly score the team's first "run." Three errors retire the side. Groans and cheers, triumph and agony accompany the lesson. What is being learned? Henry proposes that along with spelling, children are learning how to write correctly, how to write using chalk on a blackboard, how to screen out the background noise and harrassment accompanying their efforts, and how to "read" the reactions of the teacher and their classmates as they proceed in order to correct themselves. They are also learning to live with absurdity, both the absurdity of English spelling and the absurdity of the analogy between spelling and a baseball game. They are learning to deal with the humiliation that accompanies being chosen last and then letting the team down by "striking out." They are learning about competition and the exaggerated significance of success or failure when one team's winning requires another team to lose (Henry, 1963, pp. 289-290, 297-302).

Henry's general point was that human beings are "polyphasic" learners' they learn many things at the same time. This quality of human learning means that classrooms teach more than subject matter. Intentionally or by accident pupils acquire attitudes and behaviors from their classroom experiences. A classroom where quiet pupils sit erect with hands on desks and stand to respond crisply to their teacher's factual questions teaches attitudes and behaviors as surely as the one Henry described, but different ones. He was concerned that the "signal" of the spelling lesson was being drowned out by the "noise" of the tangential learning, but the same danger is present in any type of classroom.

The socialization function of schools has sometimes been termed "the hidden

curriculum," but it is hidden only when there is general agreement on what it should be and on the effectiveness with which it is being implemented. The founders of public schooling in the United States certainly never hid their intention to make children into good citizens and hard workers (Cremin, 1977). Neither is it hidden from the pupils and teachers, who are aware that a good deal of teacher time and effort goes into instruction in deportment. But there are hidden elements to it, ways in which the structure of the school and classroom socialize without the teachers' knowledge or intention and sometimes in conflict with stated goals.

Jackson (1968) focussed in three structural features of classrooms: crowds, praise, and power. He called attention to the fact that pupils are in groups, which means that they constantly encounter delay in such matters as getting the teacher to answer a question. This results in the necessity of denial of their personal needs on behalf of classroom order and fairness to others who also have needs. Those are probably hard but necessary lessons; crowds and coordination are facts of modern life. It is more difficult to see value in the social distraction from learning that results from being one learner among many. Praise and disapproval are ever-present in classrooms. Pupils can expect to be evaluated, often publicly, for most performances. They must learn to handle the stress this entails and in some cases they must learn to balance the teacher's evaluations with those of their peers. Few children care enough about the teacher's praise to risk constantly offending less-praised peers. Power is something children know about from their experiences in families, but the power teachers exercise over them is fundamentally different from that of parents because it is impersonal, just like the power they will be subjected to as adult citizens, workers, and consumers. (See also Dreeben, 1968; LeComte, 1978.)

One reason why the socialization function of schools has received considerable attention in recent years is that there has been public dissension over its goals and its effectiveness. On one side, critics see the schools as contributing

to a breakdown in the social order because of lax discipline and too much student choice. On the other side, equally dissatisfied critics see the schools as stifling creativity and discriminating against poor and minority students. But such broad-gauge critiques ignore contradictions inherent in the socialization function. As Jackson and Henry suggested, there are both positive and negative aspects to the process from any political or moral position.

One way to illustrate the Janus face of this issue is to turn to a community that has not been subject to such sharp conflict as the nation has experienced over desegregation, Vietnam, and changing social mores, a community that recalls the idealized America of our rural past. Peshkin (1978) studied such a community in rural Illinois, attending especially to its high school, which he found to represent and transmit very accurately the values of the adult community, not so much by conscious design as by the consistent selection of teachers and administrators who shared those values. This congruence between school and community can be seen as the achievement of an ideal sought in many other communities, as Peshkin pointed out with reference to such instances as textbook controversies, decentralization, resistance to busing for school integration, and parochial schools, all cases in which people have attempted to make their schools fit with their community. But this congruence was not without costs.

Peshkin identified four dilemmas created by the close fit of school and community in "Mansfield." First, the practice of hiring school personnel on the basis of their compatibility with the community limited the academic quality of the school. In hiring a new school superintendent, for example, the board rejected a candidate who had too many new ideas and chose instead one who was "country," who was like the board members and most of the other citizens of Mansfield. A second dilemma resulted from the first: limited emphasis on academic achievement, as exemplified in the selection of personnel, contributed to high intergenerational stability. The children of Mansfield did not learn to question

their parents' beliefs or to reject their way of life. This situation was problematic, in turn, because of a third dilemma: the values taught in the school included violations of important national values embodied in the U.S. Constitution, most notably the ideal of racial equality. The majority of Mansfielders considered themselves fortunate not to have any nonwhite residents; statements of racial prejudice in class discussions reflected opinions held by many adults and were not effectively disputed. Finally, the prospect of school consolidation, which might have increased academic quality and reduced costs, was strongly opposed by nearly everyone because of the contribution of the school to community life.

In more cosmopolitan communities these dilemmas are invisible. Since schools are presumed to exist to educate children, they are expected to provide the highest quality education possible, even if that means importing teachers from the city, exposing children to ideas and ways of life different from their parents', confronting the conflicts between local values and national ideals, and closing a school building that is too small to offer a sufficient range of courses and minimize costs. The dilemma in Mansfield, as Peshkin graphically portrayed, was that the school did serve very effectively to maintain a sense of community both among the young and among the adults.

Instead of "a nation of strangers" and "alienated youth," Peshkin found in Mansfield a community of friends and relations who cared about each other and a group of youth who knew they belonged. Elderly widows in Mansfield could count on someone shoveling the snow from their walks. On winter evenings, many people stepped outside before going to bed to make sure their neighbors' furnaces were operating. High school juniors and seniors typically went through a period of restlessness, feeling the lack of privacy and chafing at the limited options of a small town, but the majority of those who went to college enrolled in the same small state colleges their teachers had attended and, upon graduation, lived and worked in Mansfield or a nearby small town, just like their classmates who went

to work right after high school. Even those who left permanently to practice specialized professions returned in large numbers for homecoming festivities, retained strong ties of kinship and friendship in Mansfield, and recalled their high school days fondly. When so many personal and societal ills can be ascribed to anomie--the absence of interpersonal connections--the community-building function of Mansfield High School cannot be lightly dismissed or readily exchanged for potential improvements in academic quality, improvements that would be marginal at best, if they resulted in performance at the level of most high schools in the United States.

The limited academic power of typical high schools is documented by Cusick (1973). In the suburban high school where he was a participant-observer, the kind of high school with large numbers of students, a staff chosen for their professional qualifications, and no sense of community, which would be created by consolidating Mansfield High School, Cusick found that

> The students' most active and alive moments, and indeed the great majority of their school time, was spent not with teachers and subject-matter affairs, but in their own small-group interactions which they carried on simultaneously with their class work (p. 58).

James Coleman (1961) demonstrated using survey data that high school students usually cared more about their social interactions than academic performance. He laid the blame for this distortion of the academic goals of schools on adults rather than youth. Cusick substantiated this attribution by specifying the structural features of the school that unintentionally created this distortion.

"Horatio Gates" high school, like most large schools, was organized hierarchically, with students clearly at the bottom. Communication flowed downward from administrators through teachers to students. The teachers were subdivided by subject matter and the students were processed in groups. A multitude of rules and regulations governed student behavior and their rewards for complying were almost all in the future. These organizational features had certain intended consequences: they resulted in restricting students' activities and treating them

as an undifferentiated mass. But they also had unintended consequences: little student-teacher interaction; little student involvement in formal activities, a fragmented school experience, and minimal compliance by the students with the school's demands, including the demand for academic achievement (pp. 208-213).

The opportunities for peer interactions in and around school, as Parsons (1959) and others have pointed out, is critical to socialization. Children need to learn to get along with other people who are not their parents, siblings, or superiors. It is the balance between the socialization and the academic instructional functions of the school that is at issue. Cusick's most important contribution is his insight into the way in which the school unwittingly tips the balance away from academic achievement. It is not simply a matter of adolescents' irresistible attraction to each other, but the systematic denial of other sources of satisfaction. Classes were dominated by the teachers, leaving students in the role of spectator most of the time. Attempts to express personal concerns in class were usually ignored or disapproved. Correct and perceptive comments by students were often missed in the bustle of a large classroom. These flaws did not result from teacher ineptitude, Cusick maintained, but from the need to maintain order and deal simultaneously with many students (pp. 49-56).

The picture of extra-curricular activities was equally bleak. "A few ran what was to be run, but in truth there was not much to run" (p. 74). The so-called student leaders constituted a small clique and dominated activities, to the exclusion of the majority of students, who resented their exclusion. The "leaders" represented only their cliques. The others were no more involved in student-run activities than in any other aspects of the school. Furthermore, the special status of the activity leaders--athletes, cheerleaders, student government officers, etc.--simultaneously reinforced the peer structure and conflicted with the academic goals of the school. They were, predictably, the students with the highest status among their peers. They did not, for the most part, value academic achievement or work hard in school. They were allowed to violate many rules of conduct with

impunity, especially the athletes. In contrast, students who quietly complied with the rules and did their assignments to the best of their abilities received few rewards from the school.

Cusick pointed out that the student friendship groups served an organization maintenance function by providing information, advice, and guidance about the school's rules and procedures. Isolates who lacked this kind of support often got lost in the organization because it had no formal procedures to deal with them effectively (p. 173). Sieber (1979), also found that elementary school children's interactions with each other supported the goals of a "good" New York City school. Children reinforced the adult norms being taught by demanding fairness and cooperation. They taught each other by clarifying the teacher's instructions, providing assistance with school work, and comparing work so that performance standards were public.

If student behavior responds to the organizational features of schools, as Cusick claimed, (see also Schwartz, 1981) then we might expect to see systematic variation related to differences between schools. In many respects schools are very much alike, especially schools serving similar kinds of students. However, substantial differences in "school climate" can be found even among schools in similar communities with students from the same class, racial, and ethnic groups (Brookover, Schweitzer, Beady, Flood, and Wisenbaker, 1978). The most powerful presentation of this point of view is Metz's (1978) comparative study of two junior high schools in a city where equal distribution of students by race and socio-economic status was required by the school board. Differences in attitudes and performance of the students in the two schools could, Metz claimed, be attributed with some confidence to differences between the schools, since their student populations were nearly identical in family background. And the differences between the schools and their students were indeed quite pronounced.

"Hamilton" was notable for disorder, litter, nuisance fires in bathrooms,

class cutting, and conflicts among students. Its teachers were polarized between young and old, with each group advocating a distinctive teaching style and teacher role. Dissension among the teachers undercut the authority of all, especially outside the classroom. The dominant student group in Hamilton could be characterized as black dissidents, followed in prominence by white adherents to an emerging "counterculture." (This was a university community in 1967-68.)

"Chaun_y" was a newer school building with a design much more conducive to adult supervision and control than Hamilton. A strong principal consistently suppressed disagreement or even substantive discussion among faculty and equally consistently enforced an expectation that teachers would maintain order in their classrooms and in the halls. Conforming white students were the most prominent group in Chauncy even though they were no more numerous than at Hamilton. Neatness, order, and discipline were as noticeable in Chauncy as their opposites in Hamilton.

This was not an unalloyed blessing. Chauncy's order was ostensibly maintained as a means to enable learning, but teachers quickly discovered that if they kept their classes quiet it didn't matter what they taught and, conversely, if the principal judged their classes noisy, their instructional skills and accomplishments mattered not at all. Teachers in Chauncy had very little interaction with students (as in the school Cusick studied), the better to maintain the social distance underlying their authority and to avoid surfacing the racial and political conflicts that were overt at Hamilton but suppressed at Chauncy. Chauncy teachers were isolated from each other too in their efforts to deal with classroom problems. They assumed that such problems were unique and tried to solve them individually, while Hamilton teachers knew that the problems in their classrooms were symptoms of larger problems in the school as a whole and could, as a result, seek advice from each other and attempt school-wide responses.

Another structural characteristic affecting student behavior is school size. Large schools are able to offer a greater variety of courses and activities and greater opportunity for specialization. These are some of the reasons behind Conant's (1959) recommendation that school consolidation proceed at least to the point that a high school class have more than 100 members, a recommendation that both signalled and contributed to a dramatic increase in the size of schools over the past twenty years. Soon after Conant's widely heeded report was issued, a book was published reporting research that challenged the assumption of large school superiority. Titled Big School, Small School (Barker and Gump, 1964), the book includes a series of studies of 13 high schools in eastern Kansas enrolling from 35 to 2,287 students.

The key insight of this book, an insight that applies to other institutions as well as to schools, is that the number of opportunities for participation ("behavior settings") does not increase as fast as the number of people. More specifically, while the largest high school studied had 65 times as many students as the smallest, it had only 8 times as many academic behavior settings and 5 times as many athletic behavior settings. Differences between the largest and smallest schools were even smaller in the scope or variety of activities available within the athletic and academic behavior settings. The reason for this finding is easily explained. A tiny school will field several athletic teams and offer the basic math, English, social studies, and science courses required for accreditation. A large school will have both varsity and junior varsity teams in several sports, and offer elective courses in physics and trigonometry. But the increase in the number of different academic and athletic opportunities available in the large school does not keep pace with the increase in enrollment. Therefore, the number of opportunities per student declines steadily.

The increasing ratio of students to settings in the large schools results in what the ecological psychologists call "overmanning" or high "density" of

population. The reverse situation in the small schools is described as "undermanning" and appears to be advantageous in several respects. In an overmanned behavior setting, such as the varsity basketball team of a large high school, there are far more potential participants than can be accommodated. Hence, tryouts are held and those judged less competent are excluded from the activity. A large proportion of students find themselves on the outside of all school activities or limited to the role of spectator. In a small school, in contrast, the problem is not selecting participants, but finding enough. Every basketball team needs five players on the court and a few more on the bench. If there are only fifty boys in the school, nearly every one who can run, jump, and hold a ball will be needed to field a team. Rather than tryouts to select from among would-be players, there will be pressure on all who might contribute to come out for the team. Furthermore, the basketball players who can carry a tune will again be pressed into service when it is time to put on the annual musical because the chorus needs more male voices. In large schools, even those students who do participate are much more likely to specialize in one type of activity.

Barker and Gump and their colleagues found that both average numbers of extracurricular activities and the number of different kinds of activities students engaged in were twice as high in the small high schools as in the large ones (pp. 69-74). Moreover, the distribution of participation among students was much more even in the small schools. Students in the large schools were more polarized, with a group of active participants at one end of the continuum and a large group of students who did not participate in any extracurricular activities at the other. In the small schools there were very few students who did not participate in anything.

The kinds of satisfactions students reported from their participation also differed.

> Juniors from the small schools reported more satisfactions relating to the development of competence, to being challenged, to engaging in important actions, to being involved in group activities, and to achieving moral and cultural values; while large school Juniors reported more satisfactions dealing with vicarious enjoyment, with large entity affiliation, with learning about their school's persons and affairs, and with gaining "points" via participation (p. 197).

This difference can be attributed to the kinds of positions available to students in extracurricular activities. Proportionately many more of the students in small schools reported holding positions of importance and responsibility and they held such positions in a wider variety of behavior settings (p. 93). When students in large schools who held positions of importance and responsibility were compared with students holding similar positions in small schools, the difference in satisfaction was considerably reduced, indicating that it is the greater availability of such positions in small schools that accounts for the differences in satisfactions (p. 112).

When students were distinguished according to family background and academic performance into those most likely to drop out of school -- the "marginal" students -- and "regular" students, the investigators found that in small schools marginal students reported both pressures and attractions to participate in school activities at about the same rate as regular students, while in large schools marginal students reported fewer pressures and fewer attractions. As a result, the large schools included substantial groups of "outsiders," students with poor academic records and no extracurricular involvement, a group almost unknown in the small schools (p. 123). This finding is consistent with Peshkin's (1978) observation that Mansfield students had a strong sense of belonging.

A small-scale analysis matching Juniors in small schools with IQ's above 110 with large school Juniors selected by the same criterion revealed that the small school students were enrolled in a larger number of classes but that a greater proportion of those classes were nonacademic, suggesting

that, as in extracurricular activities, the larger number and variety of course offerings in the larger schools leads to specialization rather than to every student taking advantage of the greater number of opportunities (pp. 169-170).

The basic finding of higher levels of participation and greater satisfaction among small school students has been replicated in subsequent studies. Willems (1967) confirmed that the effects of school size are greatest for the marginal students. Wicker (1968) supported both the interpretation that it is holding responsible positions that determines satisfaction and the attribution of differences in this experience to school size. Baird (1969) found that small school students had superior achievement in art, writing, leadership, and dramatics, but not in science or music. In a second study, he found that college students from large and small high schools did not differ in their rates of participation in extracurricular college activities but that the difference between large and small colleges was identical to that found in high schools. This finding can be read two ways. While differences in rates of participation do not appear to carry over into college, and, therefore, may be less important developmentally than Barker and Gump assumed, Baird's study supports the theory of undermanning, that participation rate is determined by the situation rather than by personal characteristics. Grabe (1981) raised questions about the desirability of students experiencing pressure to participate in activities for which they may not be well-suited. He found that self-concept scores were more variable and indicators of alienation higher among small school students and speculated that these may result from such students experiencing failure in activities they would not have attempted in larger schools, where students can specialize in activities they do well.

The following propositions summarize the studies reviewed above of the socialization function of schools:

Children learn more than academics from their school experiences, especially how to behave in nonfamily groups;

Congruence between a school and community can contribute significantly to a sense of community among both adults and youth, but at some sacrifice in academic quality;

The prominence of peer social interaction in schools can displace the academic function of schools, especially at the high school level, but peer interaction can also serve to reinforce organizational and academic norms;

The prominence of peer interactions among secondary school students is not solely determined by the students' characteristics; it is a response to the structure and climate of the schools;

Marked differences in student behavior and school climate can be attributed to the beliefs and practices of teachers and administrators and the ways in which they interact to form a social system;

Small high schools offer more opportunities per student for participation in academic and extracurricular activities, especially in responsible positions; small school students, including academically marginal students participate in a greater variety of settings and report more and deeper satisfaction from their participation than those in large schools.

Socialization and Academic Learning

The studies of socialization in schools cited above referred to academic achievement principally as a value sometimes compromised by the structure of peer relations, but they concentrated on the way in which schools inculcate values and behaviors suitable to maturing members of society. Most of those

same values and behaviors, however, are functional inside the school; they are prerequisites to academic learning in a classroom setting. Another set of ecological studies has emphasized the critical importance to children's academic learning of their learning how to behave in the classroom. If we think of socialization as being for immediate purposes within the school and classroom as well as for adult roles, we can see more clearly the link between social and academic learning. As Mehan has written, "participation in classroom lessons involves the integration of academic knowledge and social or interactional skills" (1979, p. 34; see also Florio, 1978; Mitman, Margendoller, Ward and Tikunoff, 1981).

Mehan's study provides compelling evidence in support of this proposition. Using video tape to record teacher and student behavior during nine lessons in an elementary school classroom, Mehan and his colleagues first identified the structure of teacher-student verbal exchanges and then of progressively larger interactional units until they could describe an entire lesson. They then used the video tapes to confirm that the students and teachers, in fact, behaved according to the rules they had inferred and predictably changed their behavior according to certain cues. This microscopic analysis revealed just how complex the implicit rules for participation in a classroom are. Students must not only know the content of the lesson in order to participate effectively; they must also understand how to be recognized and how to state what they know appropriately. The increasing competence of the students in the classroom Mehan studied was indicated by the reduced incidence of student-initiated talk being disapproved by the teacher and a correspondingly greater responsiveness by both teacher and other students to student-initiated topics. At the beginning of the year, when a student made a statement that was not in direct response to the teacher, the teacher and other students would most often ignore it. By the end of the year, students had learned to make initiating statements in the "seams" between lesson segments so that they

did not disrupt the lesson. As a result, students exercised increasing influence over the course of a lesson by introducing new ideas and topics for discussion.

Mehan stressed that the rules for classroom participation are established jointly, which means that students influence the teacher's behavior as well as the other way around. In another report of his study (1980) he illustrated a related point: that competent students are able to carry out their personal agendas while attending to the teacher's instructional agenda. He described one girl who carried on an active conversation and exchange of money and food with two other girls, while raising her hand and participating in the lesson. Though she was the "ringleader" of her three-person social group, the teacher reprimanded the other two for talking but not her. At one point she told her classmates she intended to take off her sweater, a violation of a class rule, and then shrewdly volunteered to check on some sports equipment the teacher was concerned about at the moment, which gave her the opportunity to take off her sweater, replenish her supply of sunflower seeds, and then receive the teacher's thanks for performing the task that had hidden her own purposes. This performance is a particularly dramatic example of the ability Schwartz (1981) attributed to higher track elementary school students to carry on their peer interactions subtly, while lower class students did so overtly and suffered the consequences.

A second way in which socialization to the classroom is related to academic learning, in addition to being a prerequisite, is that different forms of instruction encourage and allow different types of social interaction, which, in turn, facilitate different kinds and levels of learning. Comparing a group of students in two different third-grade classrooms and then following them on to fourth-grade classrooms, Bossert (1979) identified two types of classrooms, "recitation" and "multitask," on the basis

of their "activity structures." The "recitation activity structure" is found in conventional classrooms where a teacher stands at the front of the room and asks questions of all the students at once, with the students responding individually. "Multitask" is the label Bossert applied to open classrooms in which students work individually and in small groups on a variety of different kinds of school work simultaneously. Bossert noted that the recitation structure entails public performance by both teacher and students and a high level of teacher control. Since everyone is aware of what the others are doing, the teacher must be strictly impartial in distributing sanctions. The multitask structure, in contrast, entails more private and noncomparable behavior, allowing the teacher to use personal influence as a sanctioning technique. For example, as other students are engaged in their tasks, the teacher can take one student aside and explain why his or her behavior is not allowed and what will happen if it continues, while in the recitation structure teachers are limited to short "desists" in controlling behavior. When asked which group of students they provided with the most assistance, all four teachers studied said the poorest, but in fact observations showed that only the multitask teachers spent the most time with the poorest students. The recitation teachers gave the most assistance to the best students because they depended on their best students to keep the recitation process going.

In addition to restricting the teachers' options for controlling student behavior, the public and comparable nature of performance in the recitation structure yielded a competitive status system among students, in which friendships were based primarily upon levels of academic performance. The good students knew who the other good students were and they selected each other as friends. These friendship groups remained stable over the school year, and cooperative activities were conducted almost exclusively within them. Friendships were more fluid in the multitask classrooms and were based more

on mutual interests than on academic performance level. Grouping during cooperative activities was heterogeneous with respect to academic performance. The fourth grade recitation teacher complained that her students did not know how to work together even though some of her students had been observed performing cooperative work quite competently in their third grade multitask classroom.

Rossert's study suggests some hidden disadvantages of the conventional practice of recitation and some advantages to open classrooms that are not immediately obvious. However, it is most useful in helping to identify both the strengths and weaknesses of the two types of classroom organization and in calling attention to the need to match activity structures with educational goals, which include both academic learning and socialization. As Grannis hypothesized on the basis of his observational study in differently structured Follow-Through classrooms: "Different controls of the conditions of teaching and learning are...appropriate for different aims" (1978, p. 32).

Gump (1980) has provided a useful synopsis of research on "the school as a social situation," especially from his field, ecological psychology. Among the substantive and methodological points he made was that "pupils behave differently in different segments" (Gump 1969, p. 207) of a lesson. He offered this as a finding from his own work that has been supported by Grannis's (1978). It is nicely illustrated by Schultz and Florio's (1979) ethnographic study of an open classroom showing that the teacher's behavior, including speech, voice level, location in the classroom, and posture, signalled transitions from one "segment" or type of activity to another. The point is brought home especially by one video taped incident in which the teacher's instructions to the class, which she consistently delivered while bending at the waist, were interrupted, causing her to change her posture. Some of the students began to move away from the

area where instructions were delivered and the teacher reprimanded them, asking, "Who told you it was time to move?" The authors note that she had, not in words but by a change in posture that had previously always signalled the end of instructions and the beginning of work time.

The fine-grained analyses of classroom interaction done by ecological researchers reveal more than teachers and students or casual observers can explain about what happens and how learning occurs. The complexity of the process gives us greater appreciation for what students have to learn in order to begin to learn their academic lessons and for what teachers have to do. Jackson (1968) emphasized the complexity of the teacher's task, claiming that the failure of laboratory-derived learning theories to affect classroom practice is a result of the "oversimplified image of what goes on in elementary school classrooms" (p. 165) upon which they are based. He argued instead that "teaching is an opportunistic process" (p. 166) in which complexity inheres not only because human beings and learning are complex but also because of the social aspect of the classroom. Teachers cannot simply attend to their learning objectives as if nothing else of consequence happened in their classrooms; they must also

> worry about whether they were just or unjust in the distribution of praise and reproof, sensitive or insensitive to the nuances of the events that transpired, consistent or inconsistent in the standards and regulations they enforced (p. 167).

Smith and Geoffrey (1968) analyzed this complexity from an unusual point of view, as a teacher-researcher team. Among the conceptions they developed about teaching that indicate how complex it is are the need for the teacher to depart from the lesson plan, the ability to anticipate unwanted occurrences and then forestall them or prepare for them, the flexibility to try out procedures and evaluate their effectiveness, "ringmastership" or the ability to handle multiple sets of interaction, the need to attend to continuity, sequential smoothness and pacing among lessons, the ability to play different roles ("gentle lamb," "ferocious tiger"), and the skill to organize the classroom to maximize opp[illegible]-

ities for "individualized interaction" (chap. 4).

Just as schools socialize students as members of the larger society, they socialize them to the miniature society of the classroom. Ecological studies of socialization for learning have yielded the following propositions:

Competence as a student requires the ability to understand and participate in the complex system of classroom interaction as well as knowledge of the subject matter;

Distinctive activity structures encourage different types of interactions among students and between students and teachers, consistent with different educational goals;

The flow of a classroom day is quite complex; it depends upon subtle forms of communication and upon a host of teacher skills and sensitivities beyond academic knowledge and instructional techniques.

The Social Organization of Schools and Unequal Educational Opportunity

Ecological studies have portrayed schools and classrooms as complex social entities and they have begun to render some of that complexity understandable, hence open to change. Nowhere is the possibility of change more important than in the schools' treatment of poor and minority children. Ecological research has demonstrated some of the ways in which the social patterns of schools and classrooms perpetuate rather than reduce inequality.

A study by Leacock (1969) holds a prominent place in this literature. She and her associates conducted observations and interviews in second and fifth grade city classrooms in four schools, each serving a predominantly lower or middle class, black or white group of students. She found that all four schools placed heavy emphasis on proper behavior--the socialization function--but that propriety was defined differently (pp. 155-157). In the schools located in both black and white middle-income neighborhoods, proper behavior was being "nice," demonstrating self-control, and having correct posture. In the lower-income schools, proper

behavior meant submission to authority. The lower-income students, especially in the predominantly black school, were being socialized to deference, according to Leacock, while the middle-income students, especially in the predominantly white school, were being prepared for leadership and responsibility. One indication of this difference was that the middle-income schools encouraged students to take initiative and interact with each other through committees and cooperative projects, which were absent in the lower-income schools, where teacher-student interaction was much more prominent than student-student. Moreover, proper behavior in the lower-income schools appeared to be an end in itself rather than the means to establish a climate for learning, which it was in the middle-income schools. Teachers in the middle-income black school placed much more emphasis on academic learning and were judged to teach more skillfully than teachers in the lower-income black school. Yet another indication of this difference was that teachers in the middle-income white school preferred students with the highest IQ scores but those in the lower-income black school preferred students with lower IQ scores who were more submissive (p. 136).

Challenging the notion that schools were less effective at teaching low-income children because they operated on a discrepant set of "middle-class values," Leacock maintained that the teachers expected less of lower-class students and communicated to them their feeling that they would not amount to much. Middle-class teachers considered lower-class, especially black, students inadequate and transmitted that assumption through:

> (1) derogation of children through negative evaluation of their work; (2) negation of the children through failure to respect contributions offered from their own experience; (3) relating to the children in ways that prepare them for subordinate social roles (p. 169).

Leacock further argued that the teachers' beliefs about the inadequacies of their low-income students, when communicated through their treatment of them, "help perpetuate the very behavior they decry" (p. 181).

This notion of a "self-fulfilling prophecy" was further developed by Rist

(1970, 1973; see also Rosenthal and Jacobson, 1968; Seaver, 1973), who observed a group of kindergarten children in an all-black city school and followed them through second grade. What he reported may be an extreme case and may not hold in different kinds of schools or communities (compare Haller and Davis, 1980), but must be taken seriously if it happens anywhere.

The kindergarten teacher (who was black) divided her students into three groups. In the absence of firm evidence of their academic ability, she assigned them to one of three tables. Those seated at Table 1 were clean and well dressed, they were at ease in their interactions with the teacher and in taking leadership with the other students; they spoke easily using less dialect, and, predictably, they were from families with higher income--none were on welfare and twice as many had a father at home and employed as at either of the other two tables. The teacher described those seated at Table 1 as "fast learners," despite having no tests or other evidence of learning ability, and said the children at the other two tables "had no idea of what was going on in the classroom" (1970, p. 422). She consistently reserved privileges such as leading the Pledge of Allegiance, taking messages to the office, coming to the front for "show and tell," and standing first in line to students at Table 1. What is more, she proceeded to teach to those children and seriously slight those at Tables 2 and 3. Perhaps most flagrantly, she did all of her blackboard work on a section in front of Table 1 that those at Table 3 often could not see. Rist quoted from his field notes one instance in which a girl at Table 3 was prohibited from following the lesson.

> Lilly stands up out of her seat. Mrs. Caplow asks Lilly what she wants. Lilly makes no verbal response to the question. Mrs. Caplow then says rather firmly to Lilly, "Sit down." Lilly does. However, Lilly sits down sideways in the chair (so she is still facing the teacher). Mrs. Caplow instructs Lilly to put her feet under the table. This Lilly does. Now she is facing directly away from the teacher and the blackboard where the teacher is demonstrating to the students how to print the letter, "O" (1970, p. 425).

Rist described with other vignettes the way in which the teacher's treatment of the children at Tables 2 and 3 was reflected in hostility toward them from

children at Table 1 and in hostility among themselves. He pointed out that name calling and disparagement were directed almost exclusively toward those children who had been consigned to low status by the teacher.

The next year, 18 of the 30 kindergarten children were assigned to a first grade teacher in the same school. The others either moved out of the district or were assigned to different schools. The first grade teacher also divided the class into three groups. All those of the original 18 who were seated at "Table A" in first grade had been at Table 1 the year before. "Table B" contained all but one of the children from Kindergarten Tables 2 and 3. First-grade repeaters were placed at Table C along with one girl from Table 3 the year before.

An almost identical process occurred in second grade. Ten of the original kindergarten group stayed in the school district and were promoted. Only those who had been at Table A in the first grade were assigned to the top reading group in second grade. Those who had been at Tables B and C were placed in the middle reading group. The lowest reading group was reserved for six repeaters and three new students.

Three points are especially noteworthy about this repeated pattern. First, the initial assignment to the top kindergarten group, which was based on non-academic indicators of "promise," since no testing had been done, became a self-fulfilling prophecy. Movement into the highest group as a result of improved performance was not observed. In fact, the only movement observed during the three school years was in the second grade when two members of the first reading group were demoted and replaced by two from the second group. The teacher's explanation for this exchange was based solely on neatness, with no reference to academic performance (pp. 442-443).

Second, the self-fulfilling prophecy also operated at the level of the teachers' treatment of the children. Rist found that the teachers expected

more from and gave more rewards to the students in the highest group and that they in turn responded with the kind of behavior the teachers valued, setting up a self-perpetuating cycle. The opposite cycle operated for the remainder of the students. The teachers thought of them as "slow learners," treated them as such, and they responded in kind. Just as Leacock (1969) found school-to-school differences in teacher emphasis on behavior, Rist found teachers directed more control language to their lower groups. (See also Laosa, 1977.) Third, the basis for assigning children to groups became progressively stronger and more "objective." When the kindergarten class moved into first grade, their new teacher had, in addition to the indicators of social class used by the kindergarten teacher, reports on the children's work in kindergarten and test scores, which demonstrated that the children in the top group had done more and better than those in the lower groups, though some of this difference clearly resulted from the teacher's having expected more and done more with these children.

Some parallels can be drawn between the process Rist uncovered and the results of tracking in high school. In an effort to disentangle the effects of race and class from the effects of tracking (i.e., assigning students to different classes on the basis of ability, performance, or aspirations), Rosenbaum (1976) chose a high school in a homogeneous white working class neighborhood and examined school records, administered a questionnaire, interviewed administrators and selected students, and conducted some informal observations. He concluded that tracking was a means of stratifying students whose family backgrounds were similar into groups with high and low probabilities of upward social mobility. The critical dividing line was between the college and noncollege tracks. As in the elementary school Rist studied, grouping by ability resulted in a status hierarchy that was painfully obvious to the students. In addition to being conscious of their subordinate status, students believed they had chosen a track on the basis of their ability and therefore felt that they deserved their status. As a result, low track students spoke of themselves in the same negative stereo-

types that high track students and teachers applied to them (pp. 162-168). They also chose their friends primarily from their own track or an adjoining one (p. 158) and participated in extracurricular activities differentially according to track: the majority of college track students participated, over 80% in two or more activities; the majority of noncollege track students did not participate at all, less then 30% in two or more (p. 156). Furthermore, college track students' IQ scores increased from 8th to 10th grade while non-college track students' scores declined.

Rosenbaum's main theme was that the tracking system worked more like a tournament than a contest, the metaphor preferred by those viewing it as a meritocratic procedure. Most students remained in the same track for all courses and all through their secondary school years. Movement from one track to another was quite rare and seven times more likely to be downward than upward when it did occur (chap. 3). As Rosenbaum defined a tournament: "when you win, you win only the right to go on to the next round; when you lose, you lose forever" (p. 40). This characterization of tracking in an all-white working class high school applies equally well to the within-class grouping Rist described, which stratified an all-black elementary school class.

Neither Leacock, Rist, nor Rosenbaum proved that schools stratify students totally without regard to academic capacity. That would require more valid tests of capacity than have yet been constructed and a more controlled study. Some of the differences teachers and counselors saw among students on the basis of family background and test scores were, no doubt, valid predictors of future academic performance and life chances. What these studies do is to suggest that some of the strategies supposedly adopted to maximize the learning of all students in fact reduce the opportunities and motivation for learning of those identified as less capable. This raises the question whether schools can be optimally effective and efficient in teaching the most able students without attaching invidious

and self-perpetuating labels to the others.

However, there is an even larger question. All three of these researchers explicitly related their findings to the racial and socio-economic stratification pervading the United States (and nearly all other societies). What they did was to show a part of the schools' role in establishing and maintaining that stratification. The larger question is whether the amount and rigidity of that stratification can be reduced and whether the lot of those at the bottom can be improved. In order to address this question, one must move beyond the schools to analyze the social, economic, and political structures in which schools are embeddad.

This requires the insights of many disciplines and research methods, but a classic study illustrates how an ecological perspective can be applied to the phenomena of education and stratification in a community. Hollingshead (1949) more than any other scholar is responsible for calling attention empirically to the influence of social class on schooling. He and his associates were able to assign every teenager in a small midwestern town to one of five social classes and then to relate their social class position to their behavior in school and a variety of community settings. In every setting Hollingshead found that their family's social class was a major correlate of what they did, how they were treated, and how they interpreted the situation.

Higher class boys and girls graduated from high school in the college preparatory course. Lower class youth dropped out of school in large numbers--almost 90% of those in the lowest class--and enrolled in the general and commercial courses. Participation in extra-curricular activities was directly related to class position, in numbers of activities, prestige of activities, and leadership positions, with the exception that boys of all classes participated in athletics (chap. 8). Cliques and dates were constituted of young people from the same or adjacent classes, to the extent that a girl who accepted a date with

a lower class boy was ostracized by her higher class friends (chap. 9). Even the location of the hooks where students hung their coats in school was determined by social class membership (p. 167).

These class-related distinctions in the school were continued in the larger community, where church denominational affiliation and church attendance reflected social class, as did membership in youth organizations and types of leisure time activities engaged in. The higher class youth did not hold part-time jobs. Among the middle and lower class youth who did, there was a clear hierarchy of prestige attached to the jobs, with the lowest class youth limited to the least desirable jobs (chap. 11).

The picture Hollingshead painted of adolescent life in a small midwestern town in 1941-42 seriously challenged easy assumptions about equal opportunity and individual liberty. The completeness and consistency of the connections he was able to make between what children learned in their families and neighborhoods, how they were treated by various community institutions, and the pattern of attitudes and behavior that they developed make his argument a powerful one. In addition to calling attention to the pervasiveness of social class in a society committed to democracy, Hollingshead demonstrated that the school's contribution to the stratification process is of a piece with many other forces in the community. While schools may be criticized for failing to reduce inequality as much as they might, they cannot be blamed for the structure of inequality created and maintained by a host of institutions.

Other community studies have documented the relation of schooling and social class (e.g., Havinghurst, Bowman, Liddle, Matthews, and Pierce, 1962). The recent study that best extends this type of analysis is Ogbu's (1974) ethnography of schooling in a poor black and Mexican-American neighborhood in Stockton, California. Rejecting prevailing explanations of the poor school performance of low-income minority children as resulting from cultural deprivation, poor schools, or genetic inferiority, Ogbu claimed instead that poor school performance was

adaptive behavior on the part of young people whose life chances were severely limited by discrimination. His interviews with parents and children indicated that both groups held high hopes for school achievement and upward mobility, but the realization that discriminatory practices made these hopes almost impossible to fulfill led parents to warn their children of the limited opportunities they had and children to perform below capacity in classwork and on standardized tests. According to Ogbu, many children simply did not take such things seriously because they did not believe their results would have any significant bearing on their personal futures.

The school, as Ogbu found it, reinforced this pattern. Teachers, administrators, and counselors held low expectations for the students and failed to reward competent performance when it occurred. They treated parents as clients rather than as partners and held inaccurate stereotypes about the students' families. Guidance counselors defined school problems as clinical problems and preferred to treat students therapeutically, even when what they needed was straightforward advice on course selection and career plans.

In a subsequent cross-national comparison drawing on available data, Ogbu (1978) has made a similar interpretation of the school performance of other "caste-like minorities," attributing their poor performance to the presence of a "job ceiling" that limits upward mobility and the rewards that are supposed to accompany academic achievement.

On the basis of these studies, we can state the following propositions about inequality in schools and classrooms:

> Schools serving children of different socio-economic and racial backgrounds emphasize different types of socialization depending upon the children's presumed future--responsibility for the middle class and submission for the lower;
>
> Teachers' expectations of children based on their parents' social class establish a "self-fulfilling prophecy," first as they give more

instructional time and effort to those they expect will succeed, second as those expectations are communicated to the children through grouping practices and the children come to accept the judgment that they have little ability and then to act accordingly;

School practices such as counseling and tracking are sorting devices that continually remove students from the competition for upward social mobility; movement from one track to another is rare and much more likely to be downward than upward;

The schools' stratification of students by race and class is consistent with the stratification accomplished by other societal institutions; schools are not solely responsible for inequality, nor do they substantially reduce it;

School failure is adaptive for minority youth as long as racial discrimination, especially in employment, severely restricts the rewards for performing well in school.

Ecological Studies of School Change: A Brief Note

The kind of structural analysis of schools and classrooms as social systems found in the studies summarized above has also been conducted on various forms of school innovation and on the change process itself. Such studies have revealed the formidable barriers confronting efforts to improve schools, barriers less visible and less tractable than achieving agreement on goals and developing new instructional skills, which are daunting enough themselves. Perhaps the most insightful of these studies is Sarason's The Culture of the School and the Problem of Change (1971). Defining the term "culture" to include what has been called in this paper the social system of the schools, Sarason made the connection between the view of schools presented here and change:

> Teaching any subject matter, from this viewpoint, is in part determined by structural or system characteristics having no intrinsic relationship to particular subject matter. If this

> assertion is even partly correct, any attempt to change a curriculum independent of changing some characteristic institutional feature runs the risk of partial or complete failure (pp. 35-36).

In the case he presented to illustrate this point, "the new math," Sarason found that the only change actually accomplished was "substituting one set of books for another" (p. 48) because the changes in relations between teachers and students required to achieve the goals of the proponents of the new math were never stated explicitly and no steps were taken to encourage or implement those changes. (See also Gross, Giacquinta and Bernstein, 1971; Smith and Keith, 1971.)

Alternative schools have provided opportunities for the kinds of studies Sarason recommended that describe and analyze the ways in which schools actually function, although, as he pointed out, starting a new school is different from changing an existing one. One of the most thorough is Swidler's (1979) study of two alternative schools in Berkeley in the early 70's. She found that these schools, in which changes in the authority relations of teachers and students were central, found substitutes for formal, unilateral authority in teachers' personal charisma and in norms of group solidarity and strict equality. However, these substitutes appeared to function more effectively in the white upper-middle class school with its counterculture communal values and style than in the lower class multi-ethnic school, where students still regarded school warily and expected adults to tell them what to do. Furthermore, each substitute had distinct costs, such as the exhaustion of teachers constantly forced to make themselves personally appealing to students. Swidler found that these schools taught social norms that were distinctly different from those taught in conventional schools (pp. 142-148), and speculated that these norms may be more appropriate to societal conditions of the near future. Other structural analyses of alternative schools written by Argyris (1974), Center for New Schools (1972), Deal (1975), Greenblatt (1977), Hamilton (1981), and Moore (1980) confirm that problems in making such schools both stable and innovative are not the result of "lack of structure," but of the difficulty of inventing and maintaining new organizational structures that are

This brief section on ecological studies of the process of school innovation will be summarized with a set of questions rather than propositions. They are questions that anyone hoping to improve schools should consider carefully.

What changes in social relations will be required if this effort is to succeed (among students, teachers, administrators, parents, et al.)?

How can those changes be accomplished? (How will teachers learn the new behavior required? How will they teach new behavior to the students? Will parents and the community accept these new social relations?)

What are the consequences of the new social relations likely to be, both intended and unintended, for academic learning and socialization?

Are those consequences consistent with the educational goals motivating the improvement effort?

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